UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,355	12/29/2003	Gaetan L. Mathieu	P80C1-US	3896

50905 7590 04/02/2007

N. KENNETH BURRASTON
KIRTON & MCCONKIE
P.O. BOX 45120
SALT LAKE CITY, UT 84145-0120

EXAMINER	
LEON, EDWIN A	
ART UNIT	PAPER NUMBER
2833	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/750,355	MATHIEU ET AL.	
	Examiner	Art Unit	
	Edwin A. León	2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *85 and 102-137* is/are pending in the application.

4a) Of the above claim(s) *103* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *85, 102 and 104-137* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: Attachment 1

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 12, 2007 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 102, 107-110, 114-116, 121-123 and 125-137 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuoka (U.S. Patent No. 5,286,208). With regard to Claim 102, Matsuoka discloses (in Attachment 1) an electronic interconnect element comprising: a first leaf portion (in Attachment 1); a contact tip (in Attachment 1) located on a first side (in Attachment 1) of the first leaf portion and disposed to

electrically engage a contact feature (18) of an electronic device (Column 3, Lines 61-62); at least one first support (in Attachment 1) offset from the contact tip and coupled directly to a second side (in Attachment 1) of the first leaf portion opposite the first side of the first leaf portion offset from; a second leaf portion (in Attachment 1) having a first side (in Attachment 1) coupled directly to the at least one first support, wherein the at least one first support joins the first leaf portion directly to the second leaf portion such that the first side of the first leaf portion, the second side of the first leaf portion, the first side of the second leaf portion, and a second side of the second leaf portion opposite the first side of the second leaf portion are substantially parallel; and at least one second support coupled directly to the second side of the second leaf portion.

With regard to Claim 107, Matsuoka discloses (in Attachment 1) an electronic interconnect element comprising: a plurality of leaf portions (in Attachment 1); a contact tip (in Attachment 1) located on a first side (in Attachment 1) of one of the plurality of leaf portions and disposed to electrically engage a contact feature (18) of an electronic device (Column 3, Lines 61-63); at least one first support (in Attachment 1) offset from the contact tip and directly coupled to a second side (in Attachment 1) of the one leaf portion opposite the first side of the one leaf portion another of the plurality of leaf portions having a first side (in Attachment 1) coupled directly to the at least one first support, wherein the first support joins the one leaf portion to the another leaf portion such that the first side of the one leaf portion, the second side of the one leaf portion, the first side of the another leaf portion, and a second side (in Attachment 1) of the another leaf portion opposite the first side of the another leaf portion are substantially

parallel; and at least one second support (in Attachment 1) offset from the at least one first support and coupled to the second side of the other leaf portion.

With regard to Claim 108, Matsuoka discloses (in Attachment 1) an electronic interconnect element comprising: a plurality of leaf structures (in Attachment 1) disposed in a stack and joined one to another by at least one support structure (in Attachment 1); a post structure (in Attachment 1) attached directly to an outer side of a first outer one of the leaf structures and configured to attach the electronic interconnect element to a first electronic component (Column 3, Lines 61-63); a contact tip structure (in Attachment 1) attached directly to an outer side of a second outer one of the leaf structures and configured to electrically contact a second electronic component (Column 3, Lines 61-63), and at least one support (in Attachment 1) directly coupled to an inner side of the first outer one of the leaf structures, wherein the inner side is opposite the outer side of the first outer one of the leaf structures, the at least one support also directly coupled to another of the plurality of leaf structures, wherein each of the leaf structures is configured to flex in response to a force on the contact tip structure from contact with the second electronic component.

With regard to Claim 109, Matsuoka discloses (in Attachment 1) the leaf structures are disposed substantially parallel in the stack.

With regard to Claim 110, Matsuoka discloses (in Attachment 1) each of the plurality of leaf structures being movable in response to a force applied to the contact tip structure and the interconnection element acts as a spring when a force is applied to the contact tip structure.

With regard to Claim 114, Matsuoka discloses (in Attachment 1) upon application of a force to the contact tip structure, each one of the leaf structures deforms towards another of the leaf structures.

With regard to Claim 115, Matsuoka discloses (in Attachment 1) upon application of a force to the contact tip structure, the leaf structures in at least one pair of adjacent leaf structures deform towards each other.

With regard to Claim 116, Matsuoka discloses (in Attachment 1) upon application of a force to the contact tip structure, the leaf structures in at least one pair of adjacent leaf structures deform in opposite directions.

With regard to Claim 121, Matsuoka discloses (in Attachment 1) all of the leaf structures except the first outer leaf structure and the second outer leaf structure are disposed between the first outer leaf structure and the second outer leaf structure.

With regard to Claim 122, Matsuoka discloses (in Attachment 1) each of the leaf structures comprises a plate with a planar surface, and each of the contact tip structure, the at least one support structure, and the post structure are attached to at least one of the planar surfaces.

With regard to Claim 123, Matsuoka discloses (in Attachment 1) the planar surfaces of the leaf structures are substantially parallel in the stack.

With regard to Claim 125, Matsuoka discloses (in Attachment 1) each of the first leaf portion and the second leaf portion is configured to flex in response to a force on the contact tip from contact with the electronic device.

With regard to Claim 126, Matsuoka discloses (in Attachment 1) each of the first leaf portion and the second leaf portion being resilient and configured to generate a counter force in response to the force on the contact tip.

With regard to Claim 127, Matsuoka discloses (in Attachment 1) each of the plurality of leaf portions is configured to flex in response to a force on the contact tip from contact with the electronic device.

With regard to Claim 128, Matsuoka discloses (in Attachment 1) each of the plurality of leaf portions is resilient and configured to generate a counter force in response to the force on the contact tip.

With regard to Claim 129, Matsuoka discloses (in Attachment 1) an electronic interconnect element comprising: a beam structure (in Attachment 1) comprising a closed end and continuous closed perimeter portion enclosing a hollow space (in Attachment 1) between closed disposed, a contact tip structure joined directly to the beam structure; and an attachment structure (in Attachment 1) configured to attach the interconnect element to an electronic component.

With regard to Claim 130, Matsuoka discloses (in Attachment 1) the beam structure comprises a pair of leaf portions (in Attachment 1) joined one to another at ends of the leaf portions.

With regard to Claim 131, Matsuoka discloses (in Attachment 1) the pair of leaf portions are joined one to another at the ends of the leaf portions by support structures (in Attachment 1).

With regard to Claim 132, Matsuoka discloses (in Attachment 1) a beam (in Attachment 1) to which the beam structure is joined by a support structure (in Attachment 1).

With regard to Claim 133, Matsuoka discloses (in Attachment 1) a plurality of beams (in Attachment 1), wherein the beam structure is joined to at least one of the beams by at least one support structure (in Attachment 1).

With regard to Claim 134, Matsuoka discloses (in Attachment 1) another beam structure (in Attachment 1) comprising another continuous closed perimeter enclosing another hollow space (in Attachment 1) disposed within the perimeter portion, wherein the beam structure and the another beam structure are joined one to another by a support structure (in Attachment 1).

With regard to Claim 136, Matsuoka discloses (in Attachment 1) an axis substantially perpendicular to the first side of the first leaf portion and passing through the contact tip is offset along a length of the first side of the first leaf portion from an axis substantially perpendicular to the first side of the first leaf portion and passing through the at least one first support.

With regard to Claim 137, Matsuoka discloses (in Attachment 1) an axis substantially perpendicular to the first side of the one of the plurality of leaf portions and passing through the contact tip is offset along a length of the one of the plurality of leaf portions from an axis substantially perpendicular to the first side of the other of the plurality of leaf portions and passing through the at least one first support.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 85, 104-106, 111-113, 117-119 and 124 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka (U.S. Patent No. 5,286,208). With regard to Claim 85, Matsuoka discloses substantially the claimed invention except for the first leaf portion comprising a structural material deposited on a conductive seed material.

Still, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first leaf portion comprising a structural material deposited on a conductive seed material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With regard to Claims 104-105, Matsuoka discloses substantially the claimed invention except for a third support point spaced apart from the first support and coupled to the opposite side of the first leaf portion offset from the contact tip, and a fourth support spaced apart from the second support and coupled to the opposite side of the second leaf portion offset from the first contact, a third leaf portion having a first

side coupled to the second support, and a third support coupled to an opposite side of the third leaf portion offset from the second support.

Still, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a third support point spaced apart from the first support and coupled to the opposite side of the first leaf portion offset from the contact tip, and a fourth support spaced apart from the second support and coupled to the opposite side of the second leaf portion offset from the first contact, a third leaf portion having a first side coupled to the second support, and a third support coupled to an opposite side of the third leaf portion offset from the second support, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

With regard to Claims 106 and 124, Matsuoka discloses substantially the claimed invention except for the contact tip, the first and second leaf portions and the first and second supports being each structurally distinct and separate elements and each of the leaf structures, each of the at least one support structures, the post structure, and the contact tip structure being distinct and separate structures.

Still, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the contact tip, the first and second leaf portions and the first and second supports being each structurally distinct and separate elements and each of the leaf structures, each of the at least one support structures, the post structure, and the contact tip structure being distinct and separate structures, since it

has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erichman*, 168 USPQ 177, 179.

With regard to Claims 111-113, Matsuoka discloses substantially the claimed invention except for the spring constant of the interconnection element comprising a sum of spring constants of each of the leaf structures, the maximum deflection of the interconnection element comprising a sum of maximum deflections of each of the leaf structures and the maximum deflection of the interconnection element comprises a sum of maximum deflections of each of the leaf structures.

Still, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the spring constant of the interconnection element comprising a sum of spring constants of each of the leaf structures, the maximum deflection of the interconnection element comprising a sum of maximum deflections of each of the leaf structures and the maximum deflection of the interconnection element comprises a sum of maximum deflections of each of the leaf structures, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617, F. 2d 272, 205 USPQ 215 (CCPA 1980).

With regard to Claims 117-119, Matsuoka discloses substantially the claimed invention except for each of the leaf structures being cylindrically shaped, each of the leaf structures being "H" shaped and each of the leaf structures being rectangular shaped.

However, it would have been obvious to modify the leaf structures being cylindrical, “H” or rectangular shaped since applicants have presented no explanation

that these particular configurations of the leaf structures are significant or are anything more than one of numerous configurations a person of ordinary skill in the art would find obvious. A change in shape is generally recognizing as being within the level of ordinary skill in the art. *In re Dailey*, 149 USPQ 47 (CCPA 1976).

With regard to Claim 120, Matsuoka discloses substantially the claimed invention except for at least one of the leaf structures comprising an opening.

Still, it would have been obvious to one of ordinary skill in the art to design at least one of the leaf structures comprising an opening since, it has been concluded that absent any convincing showing of the criticality of the design, this particular design is nothing more than the inventor choice without departing from the scope of the invention. *In re Dailey,* 149 USPQ 47 (CCPA 1976).

Response to Arguments

6. Applicant's arguments with respect to claims 85, 102 and 104-134 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edwin A. León whose telephone number is (571) 272-2008. The examiner can normally be reached on Monday - Friday 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on 571-272-2800, extension 33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Edwin A. Leon
AU 2833

EAL
March 26, 2007

Attachment 1

FIG. 3

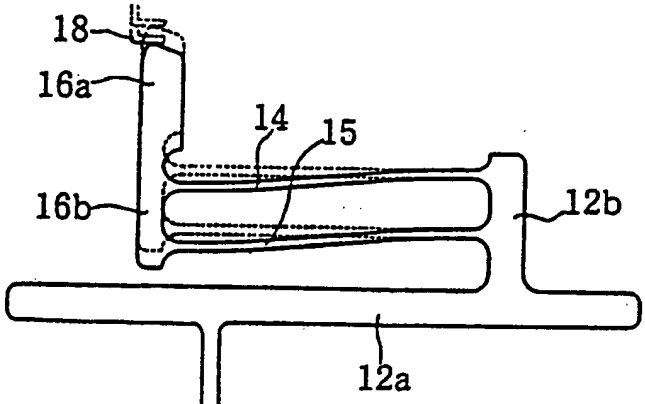

FIG. 4